

Supply Chain Optimization

Optimization and improvement of supply chain from purchase of raw materials to delivery of end product.

Methodology and Case studies will be presented.

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Supply Chain Optimization

The Benefit of Supply Chain Optimization is a smoother and more streamlined operation that save costs equivalent to 5- 15% of sales.

The savings come from reducing things like inventory, order entry points, shipping locations, manufacturing plants etc..

Supply Chain Optimization Topics

- Supply Chain Optimization Methodology
- Case Study - The Small Chemical Company
- Case Study - The Large Chemical Company
- Summary and Conclusions

Supply Chain Optimization Methodology

- Understand and Optimize the Business Strategy
- Source, Make, Deliver, and Plan Elements
- Interviews, Supply Chain Tours and Mapping,
- Benchmark Findings
- Summarize performance for internal and customer facing perspectives and rank.
- Develop Improvement Plan for the perspectives that need improvement.

Supply Chain Optimization Methodology

- Focus on most significant improvements
- Supply chain improvement variables are:
 - number of order entry points
 - number of inventory locations
 - amount of inventory
 - number of manufacturing sites or locations
 - speed of information and material flow through the supply chain

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Case Study - The Small Chemical Company

- The company did most of its business in the USA with raw materials sources and customers located here.
- Preliminary analysis eliminated the raw material acquisition system and the customer service system from consideration. They were close to world class.
- The focus was then on the internal supply chain

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Case Study - The Small Chemical Company

- The internal supply chain was found to have **excessive inventory** and many storage facilities.
- The movement of materials from inventory to shipping systems used common pipeline which needed flushing. **Rework** of the flush material was 25% of the flow through the plant.
- Bench marking directed the changes needed to **streamline** the supply chain and get the appropriate cost improvement.

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Case Study - The Small Chemical Company

- Result 1 - **Inventory and Storage** cost were reduced to 40% of previous level.
- Result 2 - Pipelines were dedicated and a few additional one added to eliminate 90% of this type **rework**.
- Result 3 - **Saving** were estimated at 11% of sales.
- The project was a **success**.

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Case Study - The Large Chemical Company

- The company was a global company with operation through out the developed world.
- It operated 8 different product based supply chains with monomers coming from 4 different internal supply sources.
- The atmosphere for change was urgent do to change in the business from value added to commodity and thus profitability was slipping

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Case Study - The Large Chemical Company

- A internal 10 person team was set up as the focal point of supply chain re-engineering.
- A consultant with experience was brought in to coordinate the methodology and the thrust.
- Business and Geographic Area management supplied experience people to coordinate change definition and implementation

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Case Study - The Large Chemical Company

- The focus was from raw material source and procurement to the customer.
- Every aspect of the supply chain was assessed and bench marked with other companies.
- Priority was established on where improvement was needed.
- Action occurred to make that improvement

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Case Study - The Large Chemical Company

- Result 1 - **Inventory** locations were cut in half on a global basis resulting in a 40% decline in raw material, in process and finished good inventory.
- Result 2 - **Order entry** locations were reduced by 60%.
- Result 3 - **Five plants** were shut down and several others were reduced in scope.

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Case Study - The Large Chemical Company

- Final result was a 12% reduction in cost based on sales.
- Effectiveness was significantly improved
- Streamlined operation involved less off the system activity.
- Customer service improved both internal to the supply chain and to the customer.

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Conclusions

- Supply Chain Optimization is an **effective method** to improve a chemical companies effectiveness and profitability.
- It requires **commitment** from the corporation with a sense of mission.
- **Resources** and possibly consultants are needed to maintain the **methodology** and the **discipline of challenging** everything.